

Applicants: Nolan and Filshie
Application No.: 09/342,024
Filed: June 28, 1999
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Please enter rewritten claims 1, 5, 8, and 19-22 as follows:

1. (Amended) A method for introducing nucleic acid into a cell of a mammalian subject in vivo, comprising:

contacting the mammalian subject with an isolated nucleic acid sequence via injection of the nucleic acid into the subject at a site near the cell into which the nucleic acid is to be introduced; and

applying a low electrical field impulse of about 300 volts per centimeter to about 600 volts per centimeter for a long pulse length of about 10 milliseconds to about 100 milliseconds at or near the site of injection, wherein the impulse is of sufficient duration and strength to allow introduction of the nucleic acid into the cell.

5. (Amended) The method of claim 1, wherein the low electrical field impulse is from about 400-500 volts per centimeter.

8. (Amended) The method of claim 1, wherein the electrical impulse is selected from the group consisting of a square wave pulse, an exponential wave pulse, a unipolar oscillating wave form, and a bipolar oscillating wave form.

19. (Amended) The method of claim 1, wherein the cell is a nondividing cell.

20. (Amended) The method of claim 1, wherein the cell is a dividing cell.

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21. (Amended) The method of claim 1, wherein the cell is a hematopoietic cell.
22. (Amended) The method of claim 21, wherein the cell is a stromal cell.

The following new claims 30-39 have been added:

30. (New) A method of claim 1, wherein the cell is a muscle cell.
31. (New) A method of claim 1, wherein the cell is a vascular cell.
32. (New) A method of claim 1, wherein the cell is a skin cell.
33. (New) A method of claim 1, wherein the cell is a tumor cell.
34. (New) A method of claim 1, wherein the nucleic acid modulates the expression of a gene in the cell.
35. (New) A method of claim 1, wherein the nucleic acid encodes an immunomodulatory agent.

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36. (New) A method of claim 1, wherein the nucleic acid encodes a therapeutic protein.

37. (New) A method of claim 1, wherein the nucleic acid encodes a biological response modifier.

38. (New) A method of claim 1, wherein the nucleic acid encodes an antibody molecule.

39. (New) A method for introducing nucleic acid into a cell of a mammalian subject in vivo, comprising:

contacting the mammalian subject in vivo with an isolated nucleic acid sequence via perfusion of the nucleic acid into the subject; and

applying a low electrical field impulse of about 300 volts per centimeter to about 600 volts per centimeter for a long pulse length of about 10 milliseconds to about 100 milliseconds at or near the cell into which the nucleic acid is to be introduced, wherein the impulse is of sufficient duration and strength to allow introduction of the nucleic acid into the cell.